

ABSTRACT OF THE DISCLOSURE

A method for non-invasively determining functional cardiac output (FCO) and/or venous blood CO₂ partial pressure (PvCO₂). The amount of CO₂ (VCO₂^N) released from the blood and end capillary blood CO₂ content (CcCO₂^N) are determined from measurements from exhaled breathing gases. The CO₂ content of the breathing gases inhaled by the subject is increased and values for VCO₂^R and CcCO₂^R are obtained. A regression analysis is performed using the obtained VCO₂^N, VO₂^R, CcCO₂^N, and CcCO₂^R values. The regression line is extrapolated to obtain a value for CcCO₂ when (VCO₂) is zero so that CvCO₂ becomes known.

The CvCO₂ thus determined can be inserted in a non-differential form in the Fick equation, along with VCO₂ and CcCO₂ values from normal breathing, to determine FCO. To determine PvCO₂, CvCO₂ is altered in accordance with the amount of oxygen in the venous blood, to correctly indicate PvCO₂. The continuing validity of the FCO measurement can be examined on a breath-by-breath basis by noting changes in an indicator variable, such as VCO₂ or end tidal CO₂ amounts.